

GOVERNMENT OF TELANGANA  
ABSTRACT

Irrigation & CAD Department – Operation & Maintenance (O&M) Policy and Preparation of estimates for the Lift Irrigation Schemes – Orders –Issued.

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IRRIGATION AND CAD (REFORMS) DEPARTMENT

G.O.Ms.No. 33

Dated: 12-06-2017

Read the following:

- 1.G.O.Rt.NO.318, I&CAD(Reforms)Department, dt: 15.05.2015.
2. From the Engineer-in-Chief (I), Lr No.ENC(I)/DCE-IV/  
OT-4/AEE-11/O&M Committee, Dt:31-03-2017.

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**ORDER:-**

Some of the Lift Irrigation schemes already commissioned are currently within defect liability/contract maintenance period. In case of many other schemes, the defect liability / O&M period is already over or about to come to an end. In order to avoid ad-hoc extension to existing O&M Agencies, there is a need to have a uniform policy for operation and maintenance of various Lift Irrigation Schemes. In this regard, Government had vide ref 1<sup>st</sup> cited, constituted a Committee to suggest policy guidelines and norms for O&M of the Lift Irrigation schemes of I&CAD Department.

2. In the reference 2<sup>nd</sup> read above, the Engineer-in-Chief (I) submitted the report of the Committee along with a draft O&M tender document, and suggested guidelines to be followed for preparation of estimates. The Committee after detailed deliberations also proposed procedure to be followed for O&M of the LI Schemes. It also came out with the idea to form a dedicated unit exclusively looking after Lift Irrigation Schemes in the Department. The Engineer-in-Chief further requested to issue orders for preparation of the estimates for O & M of LI schemes including issues related to payment of HTCC charges from the financial year 2017 -18 onwards.

3. After careful consideration of the report of committee and the discussion with the team of officers from TSGENCO (presently maintaining the LIS at AMRP Puttamgandi) and Chief Engineer, AMRP, the Government orders as follow:

**3.1 Capacity Building and Human Resources**

- a. I&CAD Department has to build the capacity in the field of operation and maintenance of electro - mechanical installations. This is essential for proper supervision even the O&M work is outsourced. As a first step in this direction, Engineer-in-Chief (AW) will identify officials working at various levels having electro-mechanical educational / professional background in the Department. Engineer-in-Chief (AW) will also notify other Departments seeking willingness of such officers to work on deputation in I&CAD Department.
- b. Based on the recommendation of Engineer-in-Chief (AW), the Government will designate a Chief Engineer (lift irrigation) with preferably degree in Electrical Engineering or having experience of working with pumps and motors. The unit will be supported by Electrical / Mechanical Engineers along with taking some experienced officers on deputation basis from TSGENCO.
- c. It is decided to dedicate two (2) divisions by redeploying the staff from existing Divisions for a group of projects in 4 erstwhile districts of Mahboobnagar, Nalgonda, Warangal and Karimnagar to begin with and expand later as per future requirements from time to time.

- d. All such staff will be imparted suitable training either by the manufacturer of the equipment or the O&M Agency.

3.2      **Outsourcing O&M activity:**

- a. In view of paucity of the technical staff in I&CAD Department, O&M activity of pump houses as to be outsourced. For this purpose open tenders shall be invited from experienced agencies with suitable norms. After appointment of Chief Enigneer (Lifts), he shall prepare the O&M estimates duly following the norms and guidelines for inviting tenders.
- b. As these schemes are expected to run from 90 days to 180 days depending upon the availability of water in the concerned storages/river basins, the technical Manpower has to be provided for running and idle period round the clock although on different scale. It is felt necessary to engage three (3) shifts for running period and a single general shift for carrying out maintenance activities for idle period. For non-running period only maintenance staff needs to be deployed. Similarly, the numbers of running and maintenance staff also depends on the size, technology and number of pumps in the pumping station. Keeping these factors in view, the Table 1 gives indicative requirement of shift duty and maintenance personnel.

**Table -1**  
**(i)              Shift duty personnel (3 Shifts) :-**

Sl. No	Particulars	Upto 3 Pump in pumping station	4 to 6 Pump in Pumping station	7 and above Pump in pumping station
1	Graduate Engineer (Running Period)	4 Nos (one in each shift in three shifts and one on leave reserve)	4 Nos (one in each shift in three shifts and one on leave reserve)	4 Nos (one in each shift in three shifts and one on leave reserve)
2	Diploma Engineer (Running Period)	4 Nos (one in each shift in three shifts and one on leave reserve)	8 Nos (two in each shift in three shifts and two on leave reserve)	8 Nos (three in each shift in three shifts and three on leave reserve)
3	Vehicle with Driver (Running Period)	One	One	One
4	Spare Drivers (Running Period)	One	One	One
5	Lift/Crane Operator (Running Period)	Two	Two	Two
6	Security	6+1=7 Nos (Two in each shift in three shifts)	6+1=7 Nos (Two in each shift in three shifts)	9+1=10 Nos (Three in each shift in three shifts)
7	Un-skilled Labour	4 nos for each Pump House for cleaning and gardening of pump house complex.		

ii. Maintenance staff (1 Shift ) :-

Sl. No	Particulars	Two stage pumping station	3 and above stage Pumping station
1	Team Leader Graduate Engineer (Electrical or Mechanical) (Idle period)	1 No. (Minimum 5 years experience)	1 No. (Minimum 5 years experience)
2	Graduate Engineer (Civil/Electrical/Mech. /ECE or IT) (Idle period)	4 Nos (one in each discipline)	6 Nos (Minimum one in each discipline)
3	Diploma Engineer (Civil/Electrical/Mech. /ECE or IT) (Idle period)	4 Nos (one in each discipline)	6 Nos (Minimum one in each discipline)
4	ITI Holders (Idle period)	4 Nos (one in each discipline)	8 Nos (Minimum one in each discipline)
5	Vehicle with Driver (Idle period)	One	Two
6	Spare Drivers (Idle period)	One	Two
7	Lift /Crane Operator(Idle period)	One	One
8	Accounts Officer (Idle period)	One	One
9	Office Assistant	One	One
10	Office Sub-ordinate (Attender)	One	One

- c. The Basic Pay of Executive Engineer shall be taken for estimating the emoluments of Team Leader. The Basic Pay for Graduate/Diploma Engineers shall be taken in to account for calculating emoluments of Graduate/Diploma Engineers. For other supporting staff, the current Standard Schedule of Rates/Outsourcing rates shall be taken. 5% and 10% escalation shall be provided over the current rates for 2<sup>nd</sup> and 3<sup>rd</sup> year respectively towards salary of personnel.
- d. Provision towards replacement/repairs of small spare parts costing up to Rs.5000/- shall be made in the estimate @ Rs 5,000/- per month per pump house for pumping period. This amount shall be included in the ECV and through rate shall be worked out. The agency has to attend the repairs and replacements costing upto Rs 5,000/- at his own cost.
- e. Provision towards replacement / repairs of major spare parts costing more than Rs. 5,000/- for reimbursement to the agency shall be as per actual expenditure for which 0.75% on capital cost of E&M Equipment is to be provided in the estimate. The agency has to procure the spare parts for timely repairs. Separate guidelines shall be issued for the authority of approval for replacement /repairs of major spare parts.
- f. Provision towards statutory taxes (VAT, Cess, Service Tax etc.,) and other civil engineering items as per the necessity of individual Pumping Stations should be provided.

3.3 Issues related to monitoring and supervision:

- a. While taking up O&M works, it is advisable to take up all the Pump Houses in an integrated manner as a single entity for the purpose of efficient operations of the scheme. For example the MGKLI scheme with 3 stage lifts and JCR Devadula project, where many lifts are spread over a large Command Area, are to be operated in a synchronized manner throughout the running season with suitable controls in SCADA or similar method for proper delivery of water as per the water requirements of the command area.
- b. The estimates for the O&M operations should follow a uniform norm as far as possible except for providing any special requirements with proper justification.

- c. The estimate for actual CC charges for maintaining all the Lift Schemes may be prepared separately and may be charged to respective head of the concerned Project. While operating pumps, all possible energy efficiency measures needs to be taken.
- d. As reported 21 parameters are to be closely monitored out of about 100 parameters monitored periodically in AMRP. The same system should be followed for all other pump houses.
- e. Frequently used spare parts shall be stored in adequate quantity and other parts with long gestation period for procurement shall be closely monitored through preventive maintenance and replacement as per condition.
- f. The pumping stations actual availability shall be measured on a monthly basis which shall be maintained at above 95%. Any fall below 85% shall attract financial cuts from the maintenance team and contractor.

#### 3.4. **Other issues**

- a. For both minor and major repairs/replacements, the Contractor should be made totally responsible and no permission from the Department will be required. However, Departmental engineers should insist on logging of all these activities and monitor them closely for quality and quantity.
  - b. O&M Scheme for each pump house should clearly specify periodicity of each preventive maintenance activity and also the list of parameters to be monitored along with a range in which it should be kept. Any deviation from this should be penalized.
  - c. No Joint Venture should be permitted for these Contracts. However, the experience of running pump houses may be relaxed initially if required, in view of this activity being new. Similarly no subletting should be permitted.
  - d. Since the output of such pump house is quantity of water flowing out, it is necessary to have flow meters installed at the outlet of the every pump house. Log of this should also be maintained and based on best national/international practice. Similarly, expected power consumption per unit of water pumped out for each pumping station should be calculated, based on the claims made by the manufactures. This should be directly linked to the performance based payment for the contractor. 50% of the calculated O&M charges should be paid as base charge and balance 50% be linked to optimum power consumption as above in addition to maintenance of the monitored parameters within the specified range.
4. The model bid document for O&M for guidance of concerned engineers will be communicated separately. The Engineer in Chief (Irrigation) is requested to take further necessary action in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

Dr. SHAILENDRA KUMAR JOSHI  
SPECIAL CHIEF SECRETARY TO GOVERNMENT

To  
The Engineer-In-Chief(Irrigation), Jalsoudha Building, Hyderabad.  
All Engineer-In-Chief's and the Chief Engineers, Irrigation & CAD Department.

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**Copy to:-**

The Finance Department.

The Accountant General / Principal Accountant General, Telangana, Hyderabad.

The Director Works & Accounts, Telangana, Hyderabad.

P.S. to Hon'ble Minister, I&CAD Department.

P.S. Special Chief Secretary, I&CAD Department.

The Dy. Director Monitoring Wing, I&CAD Department.

All Sections/Offices in I&CAD Department.

SF/SC (C.No.3652/Reforms/2017)

//FORWARDED::BY ORDER//

SECTION OFFICER